

**WHAT IS CLAIMED IS:**

1. An optical disc driving apparatus for driving an optical disc while reading out information contained in said optical disc, said optical disc having an outer peripheral surface, comprising: a housing formed with a loading slot having said optical disc passed therethrough; first detecting means for performing a detection of said outer peripheral surface of said optical disc to be moved into said housing; and second detecting means for performing a detection of said outer peripheral surface of said optical disc to be moved into said housing after said detection of said outer peripheral surface of said optical disc is performed by said first detecting means; and judging means for judging whether one optical disc or partially overlapped optical discs are passed through said loading slot of said housing based on results detected by said first and second detecting means.
2. An optical disc driving apparatus as set forth in claim 1, in which said housing has an imaginary center plane on which said center axis of said optical disc extends when said optical disc moves into said housing, an imaginary lateral plane perpendicular to said imaginary center plane, and said loading slot of said housing having an imaginary disc path on which said optical disc moves into said housing, said imaginary disc path being in perpendicular relationship with each of said imaginary center plane and said imaginary lateral plane, in which said first detecting means includes a pivotal member pivotably movable between angular positions thereof while being held in contact with said outer peripheral surface of said optical disc to be moved into said housing, and a detecting device for detecting said angular positions of said pivotal member, and in which said second detecting means includes an operation member accommodated in said housing in spaced relationship with said pivotal member of said first detecting means to be movable between operational positions thereof while being held in contact with said outer peripheral surface of said optical disc to be moved into said housing, a pivotal member to be pivotably movable between angular positions thereof in association with said operational positions of said operation member while being held in contact with said operation member, and a detecting device for detecting said angular positions of said pivotal member.
3. An optical disc driving apparatus as set forth in claim 2, in which said detecting device of said first detecting means is constituted by an optical sensor including a light source for projecting a light on a light path thereof, and a light

receiver disposed on said light path of said light source, and said light receiver being adapted to receive said projected light from said light source, and in which said pivotal member of said first detecting means has a projected portion for having said optical sensor perform said detection of said pivotal member by intervening between  
5 said light source and said light receiver of said optical sensor, said pivotal member of said first detecting means being operative to assume two different operational states consisting of a first operational state to have said light receiver of said optical sensor receive said projected light from said light source of said optical sensor, said optical sensor being operative to produce a first signal indicative of said first operational state  
10 of said pivotal member of said first detecting means when said projected light is received from said light source by said light receiver without being intercepted by said projected portion of said pivotal member, and a second operational state to have said light receiver of said optical sensor fail to receive said projected light from said light source of said optical sensor, said optical sensor being operative to produce a  
15 second signal indicative of said second operational state of said pivotal member of said first detecting means when said projected light is intercepted by said projected portion of said pivotal member without being received by said light receiver.

4. An optical disc driving apparatus as set forth in claim 2, in which said  
20 detecting device of said second detecting means is constituted by an optical sensor including a light source for projecting a light on a light path thereof, and a light receiver disposed on said light path of said light source, and said light receiver being adapted to receive said projected light from said light source, and in which said pivotal member of said second detecting means has a projected portion for having  
25 said optical sensor perform said detection of said pivotal member by intervening between said light source and said light receiver of said optical sensor, said pivotal member of said second detecting means being operative to assume two different operational states consisting of a first operational state to have said light receiver of said optical sensor receive said projected light from said light source of said optical  
30 sensor, said optical sensor being operative to produce a first signal indicative of said first operational state of said pivotal member of said second detecting means when said projected light is received from said light source by said light receiver without being intercepted by said projected portion of said pivotal member, and a second operational state to have said light receiver of said optical sensor fail to receive said  
35 projected light from said light source of said optical sensor, said optical sensor being operative to produce a second signal indicative of said second operational state of said

pivotal member of said second detecting means when said projected light is intercepted by said projected portion of said pivotal member without being received by said light receiver.

5     5.       An optical disc driving apparatus as set forth in claim 1, which further comprises third detecting means for performing a detection of said optical disc partially passed through said loading slot of said housing along said disc path; conveying means for performing a conveyance of said optical disc along said imaginary disc path; and controlling means for controlling said conveying means to  
10     have said conveying means perform said conveyance of said optical disc along said imaginary disc path in response to results judged by said judging means and results detected by said third detecting means.

15     6.       An optical disc driving apparatus as set forth in claim 5, in which said third detecting means is constituted by a plurality of optical sensors each includes a light source for projecting a light toward said imaginary disc path on a light path thereof, and a light receiver disposed on said light path of said light source, said light receiver of each of said optical sensors being adapted to receive said projected light from said light source in association with said light receiver of each of said optical sensors  
20     through said imaginary disc path, said light receiver being operative to assume two different operational states consisting of a first operational state to receive said projected light from said light source in association with said light receiver without being intercepted by said optical disc partially passed through said loading slot of said housing, a second operational state to fail to receive said projected light from said  
25     light source in association with said light receiver in response to said optical disc partially passed through said loading slot of said housing, said optical sensors of said third detecting means each being operative to produce a first signal indicative of said first operational state of said light receiver thereof when said projected light is received by said light receiver thereof without being intercepted by said optical disc  
30     partially passed through said loading slot of said housing, and to produce a second signal indicative of said second operational state of said light receiver thereof when said projected light is intercepted by said optical disc partially passed through said loading slot of said housing without being received by said light receiver thereof.

35     7.       An optical disc driving apparatus as set forth in claim 5, in which said conveying means includes a driving motor for producing a rotation torque, and a

roller member rotatable around a rotation axis thereof, said roller member having a surface to be brought into contact with a surface of said optical disc, and in which said controlling means is operative to control said conveying means to have said roller member of said conveying means rotatably moved around said rotation axis thereof in response to said rotation torque produced by said driving motor 95 of said conveying means under the condition that the judgment is made by said judging means as said optical disc is passed through said loading slot of said housing based on results judged by said judging means.

8. An optical disc driving apparatus as set forth in claim 7, in which said controlling means is operative to control said conveying means to allow said driving motor to stop producing said rotation torque under the condition that the judgment is made by said judging means as said partially overlapped optical discs are passed through said loading slot of said housing based on results detected by said first and second detecting means.

9. An optical disc driving apparatus as set forth in claim 7, in which said controlling means is operative to control said conveying means to have said conveying means stop performing said conveyance of said partially overlapped optical discs in a loading direction before having said conveying means perform said conveyance of said partially overlapped optical discs in an ejection direction opposite to said loading direction under the condition that the judgment is made by said judging means as said partially overlapped optical discs are passed through said loading slot of said housing based on results detected by said first and second detecting means.

10. An optical disc driving apparatus as set forth in claim 2, in which said pivotal member of said first detecting means is operative to push said optical disc toward a specific position on which said information contained in said optical disc is read out after said conveyance of said optical disc to be moved into said housing is performed by said conveying means, and in which said judging means is operative to judge whether or not said conveyance of said optical disc to be moved into said housing is complete by said conveying means based on results detected by said second detecting means.

11. An optical disc driving apparatus as set forth in claim 1, in which said

housing has an imaginary center plane on which said center axis of said optical disc extends when said optical disc moves into said housing, an imaginary lateral plane perpendicular to said imaginary center plane, and an imaginary disc path on which said optical disc moves into said housing, said imaginary disc path being perpendicular to said imaginary center plane and said imaginary lateral plane, in which said first detecting means includes a pivotal member pivotably movable around a pivotal axis thereof while being held in contact with said outer peripheral surface of said optical disc to be moved into said housing, and a detecting device for performing a detection of said pivotal member, and in which said second detecting means includes an operation member accommodated in said housing in spaced relationship with said pivotal member of said first detecting means to be movable between operational positions thereof while being held in contact with said outer peripheral surface of said optical disc to be moved into said housing, a first pivotal member to be pivotably movable around a pivotal axis thereof while being held in contact with said operation member, a second pivotal member pivotably movable around said pivotal axis of said first pivotal member after said pivotal member of said first detecting means is brought into contact with said outer peripheral surface of said optical disc to be moved into said housing, an urging member for resiliently urging said second pivotal member toward said first pivotal member, and a detecting device for performing a detection of said second pivotal member.

12. An optical disc driving apparatus as set forth in claim 11, in which said detecting device of said second detecting means is constituted by an optical sensor including a light source for projecting a light on a light path thereof, and a light receiver disposed on said light path of said light source, and said light receiver being adapted to receive said projected light from said light source, and in which said second pivotal member of said second detecting means has a projected portion for having said optical sensor perform said detection of said second pivotal member by intervening between said light source and said light receiver of said optical sensor, said second pivotal member of said second detecting means being operative to assume two different operational states consisting of a first operational state to have said light receiver of said optical sensor receive said projected light from said light source of said optical sensor, said optical sensor being operative to produce a first signal indicative of said first operational state of said second pivotal member of said second detecting means when said projected light is received from said light source by said light receiver without being intercepted by said project portion of said second pivotal

member, and a second operational state to have said light receiver of said optical sensor fail to receive said projected light from said light source of said optical sensor, said optical sensor being operative to produce a second signal indicative of said second operational state of said second pivotal member of said second detecting means when said projected light is intercepted by said project portion of said second pivotal member without being received by said light receiver.

13. An optical disc driving apparatus as set forth in claim 12, in which said pivotal member is adapted to assume two different operational states consisting of a first operational state to be held in engagement with said second pivotal member of said second detecting means without being brought into contact with said outer peripheral surface of said optical disc to be moved into said housing under the condition that said second signal is produced by said detecting device of said second detecting means, and a second operational state to be held in disengagement with said second pivotal member of said second detecting means while being brought into contact with said outer peripheral surface of said optical disc to be moved into said housing under the condition that said first signal is produced by said detecting device of said second detecting means.

14. An optical disc driving apparatus as set forth in claim 13, in which said controlling means is operative to control said conveying means to allow said driving motor of said conveying means to stop producing said rotation torque under the condition that the judgment is made by said judging means as said optical disc partially passed through said loading slot of said housing is ejected from said loading slot of said housing based on results detected by said first and second detecting means.

15. An optical disc driving apparatus as set forth in claim 7, which further comprises regulating means for allowing said optical disc to be moved into and out of said housing on said imaginary disc path while preventing said optical disc from being movable toward and away from said imaginary disc path.

16. An optical disc driving apparatus as set forth in claim 15, in which said regulating means includes a base member retained by said housing, a first member supported by said base member, and second members each movable toward and away from said first member, said second members respectively having lever portions each having a first surface to be brought into contact with a peripheral edge of said optical

disc to be moved into and out of said housing, and said lever portions of said second members each having a second surface extending outwardly from longitudinally outer end of said first surface thereof, and in which said first member of said regulating means has longitudinal end portions and a central plate portion intervening between  
5 said longitudinal end portions, said longitudinal end portions of said first member each having a first surface on which said optical disc to be moved into and out of said housing is rested under the condition that said peripheral edge of said optical disc is brought into contact with said first surface of each of said longitudinal end portions of  
10 said first member, and said longitudinal end portions of said first member each having a second surface on which said lever portion of said second member is rested under the condition that said second surfaces of said lever portions of said second members are respectively brought into contact with said second surfaces of said longitudinal end portions of said first member.

15 17. An optical disc driving apparatus as set forth in claim 16, which further comprises urging means for resiliently urging each of said second members of said regulating means in said second direction.

20 18. An optical disc driving apparatus as set forth in claim 17, in which said first surfaces of said longitudinal end portions of said first member of said regulating means each is inclined with respect to said imaginary disc path at a predetermined first inclination angle, and in which said first surfaces of said lever portions of said second members each is inclined with respect to said imaginary disc path at a  
25 predetermined second inclination angle.

19. An optical disc driving apparatus as set forth in claim 17, in which said first surfaces of said longitudinal end portions of said first member and said first surfaces of said lever portions of said second members form in combination an imaginary passageway in the form of a rectangle shape in cross-section taken along said  
30 imaginary disc path, said imaginary passageway having said optical disc passed therethrough on said imaginary disc path, and in which said imaginary passageway has first and second imaginary surfaces each parallel to said imaginary disc path, and upright imaginary surfaces respectively equally spaced apart from said upright surfaces of said longitudinal end portions of said first member, said imaginary  
35 passageway having first peripheral imaginary edges respectively held in contact with said first surfaces of said lever portions of said second members, and said imaginary

passageway having second peripheral imaginary edges respectively held in contact with said first surfaces of said longitudinal end portions of said first member, said upright imaginary surfaces of said imaginary passageway being in spaced relationship with each other at a distance equal to a diameter of said optical disc to be moved into and out of said housing, said first and second imaginary surfaces of said imaginary passageway being in spaced relationship with each other at a distance larger in length than a thickness of said optical disc to be moved into and out of said housing, and smaller in length than twice of said thickness of said optical disc to be moved into and out of said housing.

10

20. An optical disc driving apparatus as set forth in claim 19, in which said upright surfaces of said longitudinal ends portions of said first member of said regulating means constitute in combination guiding means for allowing said optical disc to be moved into and out of said housing on said imaginary disc path while preventing said optical disc from being moved in third and fourth directions each perpendicular to said imaginary center plane of said housing, and each parallel to said imaginary disc path.

15

21. An optical disc driving apparatus as set forth in claim 16, in which said urging means is adapted to assume two different operational states consisting of a first operational state to resiliently urging each of said second members of said regulating means in said second direction with a first resilient force thereof under the condition that said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means, and a second operational state to resiliently urging each of said second members of said regulating means in said second direction with a second resilient force thereof which is smaller than said first resilient force under the condition that said conveyance of said optical disc to be moved in said ejection direction opposite to said loading direction is performed by said conveying means, and which further comprises setting means for having said urging means selectively assume said first and second operational states in response to results judged by said judging means.

20

25

30

22. An optical disc driving apparatus as set forth in claim 15, in which said first surfaces of said longitudinal end portions of said first member are collectively adapted to bring said surface of said optical disc into contact with said surface of said roller member of said conveying means before failing to bring said surface of said optical

35



disc into contact with each of said first surfaces of said second members of said regulating means under the condition that said conveyance of said one optical disc to be moved in said loading direction is performed by said conveying means, and in which said first surfaces of said longitudinal end portions of said first member are collectively adapted to bring said surface of said partially overlapped optical discs into contact with said surface of said roller member of said conveying means before bringing said surface of said partially overlapped optical discs into contact with each of said first surfaces of said second members of said regulating means under the condition that said conveyance of said partially overlapped optical discs to be moved in said loading direction is performed by said conveying means.

23. An optical disc driving apparatus as set forth in claim 16, in which said roller member of said conveying means is supported by said base member of said regulating means to be movable toward and away from said imaginary disc path, in which said regulating means includes third members collectively for preventing said roller member of said conveying means from being moved in said first direction said third members each supported by said base member of said regulating means to be movable toward and away from said imaginary disc path, and in which said urging means is adapted to resiliently urge each of said third members of said regulating means in said second direction.

24. An optical disc driving apparatus as set forth in claim 23, in which said roller member of said conveying means includes supporting members for rotatably supporting said roller member, said supporting members respectively having outer surfaces, in which said third members of said regulating means respectively have projected portions respectively having surfaces to be brought into contact with said outer surfaces of said supporting members, in which said first surfaces of said longitudinal end portions of said first member of said regulating means are adapted to fail to bring said outer surfaces of said supporting members of said conveying means into contact with said surfaces of said third members of said regulating means with said surface of said one optical disc brought into contact with said surface of said roller member of said conveying means under the condition that said conveyance of said one optical disc to be moved in said loading direction is performed by said conveying means, and in which said first surfaces of said longitudinal end portions of said first member of said regulating means are adapted to bring said outer surfaces of said supporting members of said conveying means into contact with said surfaces and

of said third members of said regulating means with said surface of said partially overlapped optical discs brought into contact with said surface of said roller member of said conveying means under the condition that said conveyance of said partially overlapped optical discs to be moved in said loading direction is performed by said  
5 conveying means.

25. An optical disc driving apparatus as set forth in claim 24, in which said surface of one of said third members of said regulating means and said outer surface of one of said supporting members of said conveying means form in combination a  
10 first gap between said surface of one of said third members of said regulating means and said outer surface of one of said supporting members of said conveying means under the condition that said surface of said roller member of said conveying means is brought into contact with said surface of said one optical disc to be moved into said housing, and said first surfaces of said longitudinal end portions of said first member  
15 of said regulating means being brought into contact with said peripheral edge of said one optical disc to be moved into said housing, in which said surface of the other of said third members of said regulating means and said outer surface of the other of said supporting member of said conveying means form in combination a second gap between said surface of the other of said third members of said regulating means and  
20 said outer surface of the other of said supporting members of said conveying means under the condition that said surface of said roller member of said conveying means is brought into contact with said surface of said one optical disc to be moved into said housing, and said first surfaces of said longitudinal end portions of said first member of said regulating means being brought into contact with said peripheral edge of said  
25 one optical disc to be moved into said housing, and in which said first gap between said surface of one of said third members of said regulating means and said outer surface of one of said supporting members of said conveying means is smaller than said thickness of said one optical disc to be moved into and out of said housing, and said second gap between said surface of the other of said third members of said  
30 regulating means and said outer surface of the other of said supporting members of said conveying means being smaller than said thickness of said one optical disc to be moved into and out of said housing.

26. An optical disc driving apparatus as set forth in claim 25, in which said  
35 second members of said regulating means are disposed in spaced relationship with said loading slot of said housing, in which said roller member of said conveying

means is disposed between said second member of said regulating means and said loading slot of said housing, in which said first surfaces of said lever portions of said second members of said regulating means and said first and upright surfaces of one of said longitudinal end portions of said first member of said regulating means form in combination grooves each having said outer peripheral portion of said one optical disc passed therethrough, and in which said optical disc is released from said roller member of said conveying means without being held in contact with said surface of said roller member of said conveying means after said peripheral portion of said optical disc is passed through each of said grooves under the condition that said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means.

27. An optical disc driving apparatus as set forth in claim 26, in which said urging means is adapted to assume two different operational states consisting of a first operational state to resiliently urging each of said third members of said regulating means in said second direction with a first resilient force thereof under the condition that said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means, and a second operational state to resiliently urging each of said third members of said regulating means in said second direction with a second resilient force thereof which is smaller than said first resilient force under the condition that said conveyance of said optical disc to be moved in said ejection direction opposite to said loading direction is performed by said conveying means, and which further comprises setting means for having said urging means selectively assume said first and second operational states in response to results judged by said judging means.

28. An optical disc driving apparatus as set forth in claim 27, in which said urging means is constituted by first and second urging members, said first urging member being adapted to resiliently urge both one of said second members of said regulating means and one of said third members of said regulating means in said second direction, and said second urging member being adapted to resiliently urge both the other of said second members of said regulating means and the other of said third members of said regulating means in said second direction.

29. An optical disc driving apparatus as set forth in claim 28, in which said first urging member of said urging means has a plate portion, and first and second lever

portions respectively having a first free end held in engagement with one of said second members of said regulating means, and a second free end held in engagement with one of said third members of said regulating means, said first and second lever portions forming part of said first urging member respectively having first and second  
5 fix ends each integrally formed with said plate portion forming part of said first urging member, and in which said second urging member of said urging means has a plate portion, and first and second lever portions respectively having a first free end held in engagement with the other of said second members of said regulating means, and a second free end held in engagement with the other of said third members of said  
10 regulating means, said first and second lever portions forming part of said second urging member respectively having first and second fix ends each integrally formed with said plate portion forming part of said second urging member.

30. An optical disc driving apparatus as set forth in claim 29, in which said  
15 setting means includes first and second base members each supported by said housing, and first and second cam members respectively slidably supported by said first and second base members each to be movable between first and second operational positions in association with said first and second operational states of said first and second urging members of said urging means.

20 31. An optical disc driving apparatus as set forth in claim 30, in which said controlling means is adapted to control said first and second cam members of said setting means to have said first and second cam members of said setting means selectively assume said first and second operational positions based on results judged  
25 by said judging means.

32. An optical disc driving apparatus as set forth in claim 31, in which said  
controlling means is adapted to control said first and second cam members of said setting means to have each of said first and second cam members of said setting  
30 means assume said first operational position when said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means, and in which said controlling means is adapted to control said roller member of said conveying means to have said roller member of said conveying means stop performing said conveyance of said optical disc when said judgment is made by said  
35 judging means as said conveyance of said optical disc to be moved into said housing is complete based on results judged by said judging means.

33. An optical disc driving apparatus as set forth in claim 32, in which said controlling means is adapted to control said first and second cam members of said setting means to have each of said first and second cam members of said setting means assume said second operational position before controlling said roller member of said conveying means to have said roller member of said conveying means perform said conveyance of said optical disc to be moved in said ejection direction.

34. An optical disc driving apparatus as set forth in claim 15, in which said regulating means includes a base member retained by said housing, a first member supported by said base member, and at least one second member movable toward and away from said first member, said second member having a first surface to be brought into contact with one of peripheral edges of said optical disc to be moved into and out of said housing, and a second surface extending outwardly from longitudinally outer end of said first surface thereof, and in which said first member of said regulating means has longitudinal end portions each having a first surface on which said optical disc to be moved into and out of said housing is rested under the condition that one of said peripheral edges of said optical disc is brought into contact with said first surface of each of said longitudinal end portions of said first member, and said longitudinal end portions of said first member each having a second surface on which said second member is rested under the condition that said second surface of said lever portion of said second member is brought into contact with one of said second surfaces of said longitudinal end portions of said first member.

35. An optical disc driving apparatus as set forth in claim 34, which further comprises urging means for resiliently urging said second member of said regulating means toward said imaginary disc path.

36. An optical disc driving apparatus as set forth in claim 35, in which said first surface, of each of said longitudinal end portions of said first member of said regulating means is inclined with respect to said imaginary disc path at a predetermined first inclination angle, and in which said first surface of said second member is inclined with respect to said imaginary disc path at a predetermined second inclination angle.

37. An optical disc driving apparatus as set forth in claim 35, in which said first

surface of each of said longitudinal end portions of said first member and said first surface of said second member form in combination an imaginary passageway in the form of a rectangle shape in cross-section taken along said imaginary disc path, said imaginary passageway having said optical disc passed therethrough on said imaginary disc path, and in which said imaginary passageway has first and second imaginary surfaces each parallel to said imaginary disc path, and third and fourth imaginary surfaces each parallel to said center plane of said housing, in which said first surface of said second member is held in contact with one of said longitudinal extreme ends of one of said first and second imaginary surfaces of said imaginary passageway, in which said first surfaces of said longitudinal end portions of said first member are respectively held in contact with said longitudinal extreme ends of the other of said first and second imaginary surfaces of said imaginary passageway, and in which said third and fourth imaginary surfaces of said imaginary passageway are in spaced relationship with each other at a first distance equal to a diameter of said optical disc to be moved into and out of said housing, said first and second imaginary surfaces of said imaginary passageway being in spaced relationship with each other at a second distance larger in length than a thickness of said optical disc to be moved into and out of said housing, and smaller in length than twice of said thickness of said optical disc to be moved into and out of said housing.

20

38. An optical disc driving apparatus as set forth in claim 37, in which said third and fourth surfaces of said longitudinal ends portions of said first member of said regulating means constitute in combination guiding means for allowing said optical disc to be moved into and out of said housing on said imaginary disc path while preventing said optical disc from being moved in third and fourth directions each perpendicular to said imaginary center plane of said housing, and each parallel to said imaginary disc path.

39. An optical disc driving apparatus as set forth in claim 38, in which said urging means is adapted to assume two different operational states consisting of a first operational state to resiliently urging said second member of said regulating means toward said imaginary disc path with a first resilient force thereof under the condition that said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means, and a second operational state to resiliently urging said second member of said regulating means toward said imaginary disc path with a second resilient force thereof which is smaller than said first resilient force

under the condition that said conveyance of said optical disc to be moved in said ejection direction opposite to said loading direction is performed by said conveying means, and which further comprises setting means for having said urging means selectively assume said first and second operational states in response to results  
5 judged by said judging means.

40. An optical disc driving apparatus as set forth in claim 15, in which said second member of said regulating means is in spaced relationship with said loading slot 101a of said housing 101, in which said roller member of said conveying means is  
10 disposed between said second member of said regulating means and said loading slot 101a of said housing 101.

41. An optical disc driving apparatus as set forth in claim 34, in which said roller member of said conveying means is supported by said base member of said regulating means to be movable toward and away from said imaginary disc path, in which said  
15 regulating means includes at least one third member for preventing said roller member of said conveying means from being movable toward and away said imaginary disc path, said third member being supported by said base member of said regulating means to be movable toward and away from said imaginary disc path, and in which  
20 said urging means is adapted to resiliently urge said third member of said regulating means toward said imaginary disc path.

42. An optical disc driving apparatus as set forth in claim 41, in which said roller member of said conveying means includes supporting members for rotatably  
25 supporting said roller member, said supporting members respectively having outer surfaces, in which said third member of said regulating means respectively have projected portion having a surface to be brought into contact with said outer surface of said supporting members, in which said first surfaces of said longitudinal end portions of said first member of said regulating means are adapted to fail to bring said outer  
30 surfaces of said supporting members of said conveying means into contact with said surface of said third member of said regulating means with said surface of said one optical disc brought into contact with said surface of said roller member of said conveying means under the condition that said conveyance of said one optical disc to be moved in said loading direction is performed by said conveying means, and in  
35 which said first surfaces of said longitudinal end portions of said first member of said regulating means are adapted to bring said outer surfaces of said supporting members

of said conveying means into contact with said surface of said third member of said regulating means with said surface of said partially overlapped optical discs brought into contact with said surface of said roller member of said conveying means under the condition that said conveyance of said partially overlapped optical discs to be moved in said loading direction is performed by said conveying means.

43. An optical disc driving apparatus as set forth in claim 42, in which said surface of said third member of said regulating means and said outer surface of one of said supporting members of said conveying means form in combination a first gap between said surface of said third member of said regulating means and said outer surface of one of said supporting members of said conveying means under the condition that said surface of said roller member of said conveying means is brought into contact with said surface of said one optical disc to be moved into said housing, and said first surfaces of said longitudinal end portions of said first member of said regulating means being brought into contact with said peripheral edge of said one optical disc to be moved into said housing, and in which said first gap between said surface of said third member of said regulating means and said outer surface of one of said supporting members of said conveying means is smaller than said thickness of said one optical disc to be moved into and out of said housing.

44. An optical disc driving apparatus as set forth in claim 42, in which said second member of said regulating means is disposed in spaced relationship with said loading slot of said housing, in which said roller member of said conveying means is disposed between said second member of said regulating means and said loading slot of said housing, in which said first surface of said lever portion of said second member of said regulating means and said first and upright surfaces of one of said longitudinal end portions of said first member of said regulating means form in combination a groove having said outer peripheral portion of said one optical disc passed therethrough, and in which said optical disc is released from said roller member of said conveying means without being held in contact with said surface of said roller member of said conveying means after said peripheral portion of said optical disc is passed through said groove under the condition that said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means.

45. An optical disc driving apparatus as set forth in claim 44, in which said



urging means is adapted to assume two different operational states consisting of a first operational state to resiliently urging said third member of said regulating means toward said imaginary disc path with a first resilient force thereof under the condition that said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means, and a second operational state to resiliently urging said third member of said regulating means toward said imaginary disc path with a second resilient force thereof which is smaller than said first resilient force under the condition that said conveyance of said optical disc to be moved in said ejection direction opposite to said loading direction is performed by said conveying means, and which further comprises setting means for having said urging means selectively assume said first and second operational states in response to results judged by said judging means.

46. An optical disc driving apparatus as set forth in claim 45, in which said urging means is constituted by at least one urging member, said urging member being adapted to resiliently urge both said second member of said regulating means and said third member of said regulating means toward said imaginary disc path.

47. An optical disc driving apparatus as set forth in claim 46, in which said urging member of said urging means has a plate portion, and first and second lever portions respectively having a first free end held in engagement with said second member of said regulating means, and a second free end held in engagement with said third member of said regulating means, said first and second lever portions forming part of said urging member respectively having first and second fix ends each integrally formed with said plate portion forming part of said urging member.

48. An optical disc driving apparatus as set forth in claim 47, in which said setting means includes at least one base member supported by said housing, and at least one cam member slidably supported by said base member to be movable between first and second operational positions in association with said first and second operational states of said urging member of said urging means.

49. An optical disc driving apparatus as set forth in claim 48, in which said controlling means is adapted to control said cam member of said setting means to have said cam members of said setting means selectively assume said first and second operational positions based on results judged by said judging means.

50. An optical disc driving apparatus as set forth in claim 49, in which said controlling means is adapted to control said cam member of said setting means to have said cam member of said setting means assume said first operational position  
5 when said conveyance of said optical disc to be moved in said loading direction is performed by said conveying means, in which said conveying means is adapted to perform said conveyance of said optical disc to be moved in said loading direction, and in which said controlling means is adapted to control said roller member of said conveying means to have said roller member of said conveying means stop  
10 performing said conveyance of said optical disc when said judgment is made by said judging means as said conveyance of said optical disc to be moved into said housing is complete within said specific time interval by said conveying means based on results judged by said judging means.

15 51. An optical disc driving apparatus as set forth in claim 50, in which said controlling means is adapted to control said cam member of said setting means to have said cam member of said setting means assume said second operational position before controlling said roller member of said conveying means to have said roller member of said conveying means perform said conveyance of said optical disc to be  
20 moved in said ejection direction under the condition that said judgment is made by said judging means as said conveyance of said optical disc to be moved into said housing is not complete within said specific time interval by said conveying means based on results judged by said judging means.

25 52. An electronic apparatus for reproducing a information contained in an optical disc having an outer peripheral surface comprising a casing and an optical disc driving apparatus accommodated by said casing, said optical disc driving apparatus for driving an optical disc while reading out information contained in said optical disc, including: a housing formed with an loading slot having said optical disc passed  
30 therethrough; first detecting means for performing a detection of said outer peripheral surface of said optical disc to be moved into said housing; and second detecting means for performing a detection of said outer peripheral surface of said optical disc to be moved into said housing after said detection of said outer peripheral surface of said optical disc is performed by said first detecting means; and judging means for  
35 judging whether one optical disc or partially overlapped optical discs are passed through said loading slot of said housing based on results detected by said first and

second detecting means.

53. A vehicular electronic apparatus for reproducing information contained in an optical disc having an outer peripheral surface comprising a casing and an optical disc driving apparatus accommodated by said casing, said optical disc driving apparatus for driving an optical disc while reading out information contained in said optical disc, including: a housing formed with an loading slot having said optical disc passed therethrough; first detecting means for performing a detection of said outer peripheral surface of said optical disc to be moved into said housing; and second detecting means for performing a detection of said outer peripheral surface of said optical disc to be moved into said housing after said detection of said outer peripheral surface of said optical disc is performed by said first detecting means; and judging means for judging whether one optical disc or partially overlapped optical discs are passed through said loading slot of said housing based on results detected by said first and second detecting means.